

CHAL-0830-10

13 January 1960

MEMORANDUM FOR : Deputy Director of Central Intelligence

SUBJECT : Development and Procurement of David Clark Company
Model S-680 Helmet

REFERENCE : CHAL-0814, dated 23 December 1959, entitled Activity
Program, CHALICE Development, Item 2 d.

1. I have investigated the referenced item about which you called me on 11 January and can report as follows:

A. Under the stimulus of Project CHALICE and with the advice and guidance of ARHC, the David Clark Company developed the partial pressure suit and MA-2 helmet currently in use in Project CHALICE. The MA-2 configuration incorporated a number of design advances over the then current MA-1 suit which is in general use in the Air Force today. Minor modifications to the MA-2 helmet have occurred since its adoption by Project CHALICE in 1955, but with the passage of time certain demonstrated deficiencies have occurred. Principal among these are:

- (1) Limited sideward pilot visibility.
- (2) Pilot discomfort caused by wearing the helmet for extended periods of time including several hours of pre-breathing.
- (3) Minor maintenance difficulties associated with face plate and neck seal fittings.
- (4) Occasional fogging of face plate during exhalation.
- (5) Absence of integrated sun shield and inability of wearer to make any adjustment to helmet in flight.

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B. This Division has for some time considered the feasibility of continuing research in an improved version of the MA-2 helmet to redress the principal deficiencies outlined above. Together with ARDC, investigations of late model (fish bowl) helmets similar to those employed by the Navy were undertaken, but each was rejected. The David Clark Company indicated that with engineering changes in their model S-880 helmet used with the A/P-225-2 partial pressure suit a reasonable chance of eliminating these difficulties existed. Accordingly, a cost proposal was solicited from them.

2. At the time the referenced document was composed, it was planned to develop two prototype helmets incorporating the modifications above with the idea that one would be pilot-tested and the other tested to destruction if need be. The informal oral estimate of the David Clark Company was the figure cited in paragraph 2 d. of the reference. Since that time (23 December 1959), it was decided to conduct this research on a more modest scale with a single prototype helmet as a production sample. The cost of item 2 d. accordingly can be and should be reduced from to the amount of the firm engineering change proposal now in hand:

3. I believe you will be interested in the Clark Proposal (CDC-3), dated 7 January 1960, which I have taken the liberty of attaching for your information.

4. Should you approve in the recommended proposal and should the research be productive, a supplemental Activity Program Approval will be submitted for the purchase of an estimated twenty-five helmets to replace those currently in use. The David Clark Company estimates that the development work required for the initial prototype helmet would take sixty days from date of authorization to proceed. Should you have any further questions after reading this memorandum and the attachment, I would be happy to respond to them.

SIGNED

JAMES A. CUNNINGHAM, JR.
Chief, Administrative Branch
DDO

Attachment
CDC-3

CC: DD/P

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